

( -- 538. A plate adapted to be applied to the anterior human cervical spine for contacting the anterior aspects of at least two cervical vertebral bodies to be fused together, said plate comprising:

a longitudinal axis, a lower surface being concave along a substantial portion of the longitudinal axis of said plate and adapted to contact the cervical vertebral bodies, and an upper surface opposite said lower surface;

at least three bone screw receiving holes extending through said plate from said upper surface through said lower surface, each of said bone screw receiving holes having a central longitudinal axis and a radius, each of said bone screw receiving holes being adapted to receive a screw for engaging said plate to the cervical spine; and

B a locking element recess adapted to receive a locking element for locking screws to said plate, said locking element recess having a central longitudinal axis and a radius, at least three of said bone screw receiving holes being positioned proximate said locking element recess so that a distance between the central longitudinal axis of said locking element recess and the central longitudinal axis of each of said bone screw receiving holes is less than the sum of the radii of said locking element recess and each of said bone screw receiving holes, respectively.

2 539. The plate of claim 538, wherein said locking element recess is threaded to cooperatively engage the locking element.

3 540. The plate of claim 538, wherein said lower surface has a radius of curvature between approximately 15 cm to 30 cm.

4 541. The plate of claim 538, wherein said lower surface has a radius of curvature between approximately 20 cm to 25 cm.

5. 542. The plate of claim 538, wherein said lower surface has a second concave curvature transverse to the longitudinal axis of said plate, said second concave curvature having a radius of curvature between approximately 15 mm to 25 mm.

6. 543. The plate of claim 542, wherein said second concave curvature has a radius of curvature between approximately 19 mm to 21 mm.

7. 544. The plate of claim 538, wherein said plate has a thickness between said upper surface and said lower surface of between approximately 2 mm to 3 mm.

8. 545. The plate of claim 544, wherein the thickness of said plate is between approximately 2.25 mm to 2.5 mm.

9. 546. The plate of claim 538, wherein said plate has a generally rectangular configuration with lobes extending from at least the corners of said plate and has at least one of said bone screw receiving holes located within one of said lobes.

10. 547. The plate of claim 538, wherein said plate has a minimum length longer than a maximum width.

11. 548. The plate of claim 547, wherein said plate has a length sufficient to span at least three consecutive vertebral bodies.

12. 549. The plate of claim 538, wherein the central longitudinal axis of each bone screw receiving hole is generally perpendicular to said lower surface of said plate.

13. 550. The plate of claim 538, wherein at least a portion of said lower surface comprises a bone ingrowth material.

14. 551. The plate of claim 538, wherein at least a portion of said lower surface comprises a bone growth material.

15 552. The plate of claim 538, wherein at least a portion of said plate is coated with a material to induce the formation of bone.

16 553. The plate of claim 538, wherein said plate comprises bone morphogenetic protein.

17 554. The plate of claim 538, wherein at least a portion of said plate is made of a material which is resorbable.

18 555. The plate of claim 554, wherein said resorbable material is polyglyconate.

19 556. The plate of claim 554, wherein said resorbable material is impregnated with a fusion promoting substance.

20 557. The plate of claim 538, wherein at least a portion of said lower surface is textured so as to promote bone ingrowth.

21 558. The plate of claim 557, wherein said textured portion is impregnated with a fusion promoting substance.

22 559. The plate of claim 538, wherein said lower surface is porous so as to promote bone growth.

23 560. The plate of claim 559, wherein said lower surface has a porosity of approximately between 50 microns to 500 microns.

24 561. The plate of claim 560, wherein said lower surface has a porosity of approximately between 100 microns to 300 microns.

25 562. The plate of claim 538, in combination with an interbody implant.

26 563. The plate of claim 538, in combination with a bone graft.

27 564. The plate of claim 538, in combination with a bone growth promoting material.

28 565. The plate of claim 564, wherein said bone growth promoting material is at least in part other than bone.

29 566. The plate of claim 564, wherein said bone growth promoting material is at least in part bone.

30 567. The plate of claim 564, wherein said bone growth promoting material includes at least one of bone morphogenetic protein, hydroxyapatite, and hydroxyapatite tricalcium phosphate.

31 568. The plate of claim 538, in combination with a bioresorbable material.

32 569. A plate adapted to be applied to the anterior human cervical spine for contacting the anterior aspects of at least two cervical vertebral bodies to be fused together, said plate comprising:

a lower surface being concave along a substantial portion of the longitudinal axis of said plate and adapted to contact the cervical vertebral bodies and an upper surface opposite said lower surface; and

a recess in said upper surface, said recess having a central longitudinal axis, said recess having at least three bone screw receiving holes extending through said plate from said upper surface through said lower surface, each of said bone screw receiving holes being adapted to receive a bone screw for engaging said plate to the cervical spine, said recess having a bore adapted to receive at least a portion of a locking element for locking the bone screws to said plate, said bore being coaxial with the central longitudinal axis of said recess.

33 570. The plate of claim 569, wherein said bore is threaded to cooperatively engage the locking element.

34/ 571. The plate of claim 569, wherein said lower surface has a radius of curvature between approximately 15 cm to 30 cm.

35/ 572. The plate of claim 569, wherein said lower surface has a radius of curvature between approximately 20 cm to 25 cm.

36/ 573. The plate of claim 569, wherein said lower surface has a second concave curvature transverse to the longitudinal axis of said plate, said second concave curvature having a radius of curvature between approximately 15 mm to 25 mm.

37/ 574. The plate of claim 573, wherein said second concave curvature has a radius of curvature between approximately 19 mm to 21 mm.

38/ 575. The plate of claim 569, wherein said plate has a thickness between said upper surface and said lower surface of between approximately 2 mm to 3 mm.

39/ 576. The plate of claim 575, wherein the thickness of said plate is between approximately 2.25 mm to 2.5 mm.

40/ 577. The plate of claim 569, wherein said plate has a generally rectangular configuration with lobes extending from at least the corners of said plate and has at least one of said bone screw receiving holes located within one of said lobes.

41/ 578. The plate of claim 569, wherein said plate has a minimum length longer than a maximum width.

42/ 579. The plate of claim 578, wherein said plate has a length sufficient to span at least three consecutive vertebral bodies.

43/ 580. The plate of claim 569, wherein the central longitudinal axis of each bone screw receiving hole is generally perpendicular to said lower surface of said plate.

44/ 581. The plate of claim 569, wherein at least a portion of said lower surface comprises a bone ingrowth material. 32

45/ 582. The plate of claim 569, wherein at least a portion of said lower surface comprises a bone growth material. 32

46/ 583. The plate of claim 569, wherein at least a portion of said plate is coated with a material to induce the formation of bone. 32

47/ 584. The plate of claim 569, wherein said plate comprises bone morphogenetic protein. 32

48/ 585. The plate of claim 569, wherein at least a portion of said plate is made of a material which is resorbable. 32

49/ 586. The plate of claim 585, wherein said resorbable material is polyglyconate. 48

50/ 587. The plate of claim 585, wherein said resorbable material is impregnated with a fusion promoting substance. 48

51/ 588. The plate of claim 569, wherein at least a portion of said lower surface is textured so as to promote bone ingrowth. 32

52/ 589. The plate of claim 588, wherein said textured portion is impregnated with a fusion promoting substance. 32

53/ 590. The plate of claim 569, wherein said lower surface is porous so as to promote bone growth. 32

54/ 591. The plate of claim 590, wherein said lower surface has a porosity of approximately between 50 microns to 500 microns. 53

55/ 592. The plate of claim 591, wherein said lower surface has a porosity of approximately between 100 microns to 300 microns. 54

56/ 593. The plate of claim ~~569~~<sup>32</sup>, wherein at least three of said bone screw receiving holes are equal distant from the central longitudinal axis of said recess.

57/ 594. The plate of claim ~~569~~<sup>32</sup>, in combination with an interbody implant.

58/ 595. The plate of claim ~~569~~<sup>32</sup>, in combination with a bone graft.

59/ 596. The plate of claim ~~569~~<sup>32</sup>, in combination with a bone growth promoting material.

60/ 597. The plate of claim ~~596~~<sup>32 59</sup>, wherein said bone growth promoting material is at least in part other than bone.

61/ 598. The plate of claim ~~596~~<sup>32 59</sup>, wherein said bone growth promoting material is at least in part bone.

B 62/ 599. The plate of claim ~~596~~<sup>32 59</sup>, wherein said bone growth promoting material includes at least one of bone morphogenetic protein, hydroxyapatite, and hydroxyapatite tricalcium phosphate.

63/ 600. The plate of claim ~~569~~<sup>32</sup>, in combination with a bioresorbable material.

601. A plate adapted to be applied to the anterior human cervical spine for contacting the anterior aspects of at least two cervical vertebral bodies to be fused together, said plate comprising:

a longitudinal axis, a lower surface being concave along a substantial portion of the longitudinal axis of said plate and adapted to contact the cervical vertebral bodies, and an upper surface opposite said lower surface, said lower surface being configured to promote bone ingrowth along said lower surface; and

at least two bone screw receiving holes extending through said plate from said upper surface through said lower surface, each of said bone screw receiving holes being adapted to receive a screw for engaging said plate to the cervical spine.

602. The plate of claim 601, wherein said lower surface has a radius of curvature between approximately 15 cm to 30 cm.

603. The plate of claim 601, wherein said lower surface has a radius of curvature between approximately 20 cm to 25 cm.

604. The plate of claim 601, wherein said lower surface has a second concave curvature transverse to the longitudinal axis of said plate, said second concave curvature having a radius of curvature between approximately 15 mm to 25 mm.

B 605. The plate of claim 604, wherein said second concave curvature has a radius of curvature between approximately 19 mm to 21 mm.

606. The plate of claim 601, wherein said plate has a thickness between said upper surface and said lower surface of between approximately 2 mm to 3 mm.

607. The plate of claim 606, wherein the thickness of said plate is between approximately 2.25 mm to 2.5 mm.

608. The plate of claim 601, wherein said plate has a generally rectangular configuration with lobes extending from at least the corners of said plate and has at least one of said bone screw receiving holes located within one of said lobes.

609. The plate of claim 601, wherein said plate has a minimum length longer than a maximum width.

610. The plate of claim 609, wherein said plate has a length sufficient to span at least three consecutive vertebral bodies.



611. The plate of claim 601, wherein at least a portion of said lower surface comprises a bone ingrowth material.

612. The plate of claim 601, wherein at least a portion of said lower surface comprises a bone growth material.

613. The plate of claim 601, wherein at least a portion of said plate is coated with a material to induce the formation of bone.

614. The plate of claim 601, wherein said plate comprises bone morphogenetic protein.

615. The plate of claim 601, wherein at least a portion of said plate is made of a material which is resorbable.

616. The plate of claim 615, wherein said resorbable material is polyglyconate.

617. The plate of claim 615, wherein said resorbable material is impregnated with a fusion promoting substance.

618. The plate of claim 601, wherein at least a portion of said lower surface is textured so as to promote bone ingrowth.

619. The plate of claim 618, wherein said textured portion is impregnated with a fusion promoting substance.

620. The plate of claim 601, wherein said lower surface is porous so as to promote bone growth.

621. The plate of claim 620, wherein said lower surface has a porosity of approximately between 50 microns to 500 microns.

622. The plate of claim 621, wherein said lower surface has a porosity of approximately between 100 microns to 300 microns.

623. The plate of claim 601, in combination with an interbody implant.

624. The plate of claim 601, in combination with a bone graft.

625. The plate of claim 601, in combination with a bone growth promoting material.

626. The plate of claim 625, wherein said bone growth promoting material is at least in part other than bone.

627. The plate of claim 625, wherein said bone growth promoting material is at least in part bone.

628. The plate of claim 625, wherein said bone growth promoting material includes at least one of bone morphogenetic protein, hydroxyapatite, and hydroxyapatite tricalcium phosphate.

629. The plate of claim 601, in combination with a bioresorbable material.

630. A plate adapted to be applied to the anterior human cervical spine for contacting the anterior aspects of at least two cervical vertebral bodies to be fused together, said plate comprising:

a mid-longitudinal axis, a lower surface being concave along a substantial portion of the mid-longitudinal axis of said plate and adapted to contact the cervical vertebral bodies, and an upper surface opposite said lower surface;

at least two bone screw receiving holes extending through said plate from said upper surface through said lower surface, each of said bone screw receiving holes having a central longitudinal axis and a radius, each of said bone screw receiving holes being adapted to receive a bone screw for engaging said plate to the cervical spine; and

opposite first and second ends along the mid-longitudinal axis of said plate, at least said first end having one of said bone screw receiving holes on each side of the mid-longitudinal axis of said plate, at least said first end having an end wall extending from said upper surface to said lower surface, said end wall being proximate to a straight line connecting the central longitudinal axes of each bone screw receiving hole at said first end, said end wall being located a distance from the line that is less than a distance of the radius of either of said bone screw receiving holes at said first end.

631. The plate of claim 630, wherein said lower surface has a radius of curvature between approximately 15 cm to 30 cm.

632. The plate of claim 630, wherein said lower surface has a radius of curvature between approximately 20 cm to 25 cm.

B 633. The plate of claim 630, wherein said lower surface has a second concave curvature transverse to the mid-longitudinal axis of said plate, said second concave curvature having a radius of curvature between approximately 15 mm to 25 mm.

634. The plate of claim 633, wherein said second concave curvature has a radius of curvature between approximately 19 mm to 21 mm.

635. The plate of claim 630, wherein said plate has a thickness between said upper surface and said lower surface of between approximately 2 mm to 3 mm.

636. The plate of claim 635, wherein the thickness of said plate is between approximately 2.25 mm to 2.5 mm.

637. The plate of claim 630, wherein said plate has a generally rectangular configuration with lobes extending from at least the corners of said plate and has at least one of said bone screw receiving holes located within one of said lobes.

638. The plate of claim 630, wherein said plate has a minimum length longer than a maximum width.

639. The plate of claim 638, wherein said plate has a length sufficient to span at least three consecutive vertebral bodies.

640. The plate of claim 630, wherein the central longitudinal axis of each bone screw receiving hole is generally perpendicular to said lower surface of said plate.

641. The plate of claim 630, wherein at least a portion of said lower surface comprises a bone ingrowth material.

642. The plate of claim 630, wherein at least a portion of said lower surface comprises a bone growth material.

643. The plate of claim 630, wherein at least a portion of said plate is coated with a material to induce the formation of bone.

644. The plate of claim 630, wherein said plate comprises bone morphogenetic protein.

645. The plate of claim 630, wherein at least a portion of said plate is made of a material which is resorbable.

646. The plate of claim 645, wherein said resorbable material is polyglyconate.

647. The plate of claim 645, wherein said resorbable material is impregnated with a fusion promoting substance.

648. The plate of claim 630, wherein at least a portion of said lower surface is textured so as to promote bone ingrowth.

649. The plate of claim 648, wherein said textured portion is impregnated with a fusion promoting substance.

650. The plate of claim 630, wherein said lower surface is porous so as to promote bone growth.

651. The plate of claim 650, wherein said lower surface has a porosity of approximately between 50 microns to 500 microns.

652. The plate of claim 651, wherein said lower surface has a porosity of approximately between 100 microns to 300 microns.

653. The plate of claim 630, in combination with an interbody implant.

654. The plate of claim 630, in combination with a bone graft.

655. The plate of claim 630, in combination with a bone growth promoting material.

656. The plate of claim 655, wherein said bone growth promoting material is at least in part other than bone.

657. The plate of claim 655, wherein said bone growth promoting material is at least in part bone.

658. The plate of claim 655, wherein said bone growth promoting material includes at least one of bone morphogenetic protein, hydroxyapatite, and hydroxyapatite tricalcium phosphate.

659. The plate of claim 630, in combination with a bioresorbable material.

64 660. A plate adapted to be applied to the anterior human cervical spine for contacting the anterior aspects of at least two cervical vertebral bodies to be fused together, said plate comprising:

a longitudinal axis, a lower surface being concave along a substantial portion of the longitudinal axis of said plate and adapted to contact the cervical vertebral bodies, and an upper surface opposite said lower surface; and

at least three bone screw receiving holes extending through said plate from said upper surface through said lower surface, each of said bone screw receiving holes being adapted to receive a screw for engaging said plate to the cervical spine, at least three of said bone screw receiving holes being located at least in part within a countersunk region therebetween, said countersunk region having an interrupted perimeter, said perimeter having at least three convex portions and at least three concave portions.

65/ 661. The plate of claim 660, wherein said lower surface has a radius of curvature between approximately 15 cm to 30 cm.

66/ 662. The plate of claim 660, wherein said lower surface has a radius of curvature between approximately 20 cm to 25 cm.

67/ 663. The plate of claim 660, wherein said lower surface has a second concave curvature transverse to the longitudinal axis of said plate, said second concave curvature having a radius of curvature between approximately 15 mm to 25 mm.

68/ 664. The plate of claim 663, wherein said second concave curvature has a radius of curvature between approximately 19 mm to 21 mm.

69/ 665. The plate of claim 660, wherein said plate has a thickness between said upper surface and said lower surface of between approximately 2 mm to 3 mm.

70/ 666. The plate of claim 665, wherein the thickness of said plate is between approximately 2.25 mm to 2.5 mm.

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71/ 667. The plate of claim 660, wherein said plate has a generally rectangular configuration with lobes extending from at least the corners of said plate and has at least one of said bone screw receiving holes located within one of said lobes.

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72/ 668. The plate of claim 660, wherein said plate has a minimum length longer than a maximum width.

64  
73/ 669. The plate of claim 660, wherein said plate has a length sufficient to span at least three consecutive vertebral bodies.

64  
74/ 670. The plate of claim 660, wherein at least a portion of said lower surface comprises a bone ingrowth material.

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75/ 671. The plate of claim 660, wherein at least a portion of said lower surface comprises a bone growth material.

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76/ 672. The plate of claim 660, wherein at least a portion of said plate is coated with a material to induce the formation of bone.

77/ 673. The plate of claim 660, wherein said plate comprises bone morphogenetic protein.

78/ 674. The plate of claim 660, wherein at least a portion of said plate is made of a material which is resorbable.

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79/ 675. The plate of claim 674, wherein said resorbable material is polyglyconate.

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80/ 676. The plate of claim 674, wherein said resorbable material is impregnated with a fusion promoting substance.

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81/ 677. The plate of claim 660, wherein at least a portion of said lower surface is textured so as to promote bone ingrowth.

82/ 678. The plate of claim 677, wherein said textured portion is impregnated with a fusion promoting substance.

83/ 679. The plate of claim 660, wherein said lower surface is porous so as to promote bone growth.

84/ 680. The plate of claim 679, wherein said lower surface has a porosity of approximately between 50 microns to 500 microns.

85/ 681. The plate of claim 680, wherein said lower surface has a porosity of approximately between 100 microns to 300 microns.

86/ 682. The plate of claim 660, further comprising a fourth bone screw receiving hole located at least in part within the countersunk region, said perimeter having four convex portions and four concave portions.

87/ 683. The plate of claim 660, in combination with an interbody implant.

88/ 684. The plate of claim 660, in combination with a bone graft.

89/ 685. The plate of claim 660, in combination with a bone growth promoting material.

90/ 686. The plate of claim 685, wherein said bone growth promoting material is at least in part other than bone.

91/ 687. The plate of claim 685, wherein said bone growth promoting material is at least in part bone.

92/ 688. The plate of claim 685, wherein said bone growth promoting material includes at least one of bone morphogenetic protein, hydroxyapatite, and hydroxyapatite tricalcium phosphate.

93/ 689. The plate of claim 660, in combination with a bioresorbable material.



94/ 690. A plate adapted to be applied to the anterior human cervical spine for contacting the anterior aspects of at least two cervical vertebral bodies to be fused together, said plate comprising:

a longitudinal axis, a lower surface being concave along a substantial portion of the longitudinal axis of said plate and adapted to contact the cervical vertebral bodies, and an upper surface opposite said lower surface;

at least three bone screw receiving holes extending through said plate from said upper surface through said lower surface, each of said bone screw receiving holes having a central longitudinal axis, each of said bone screw receiving holes being adapted to receive a screw for engaging said plate to the cervical spine, the central longitudinal axes of three of said bone screw receiving holes forming the corners of an isosceles triangle, the isosceles triangle having a centroid; and

a bore adapted to receive a locking element for locking screws to said plate, said bore having a central longitudinal axis located at the centroid of the isosceles triangle.

95/ 691. The plate of claim 690, wherein said locking element recess is threaded to cooperatively engage the locking element.

96/ 692. The plate of claim 690, wherein said lower surface has a radius of curvature between approximately 15 cm to 30 cm.

97/ 693. The plate of claim 690, wherein said lower surface has a radius of curvature between approximately 20 cm to 25 cm.

98/ 694. The plate of claim 690, wherein said lower surface has a second concave curvature transverse to the longitudinal axis of said plate, said second concave curvature having a radius of curvature between approximately 15 mm to 25 mm.

99 695. The plate of claim 694, wherein said second concave curvature has a radius of curvature between approximately 19 mm to 21 mm.

100 696. The plate of claim 690, wherein said plate has a thickness between said upper surface and said lower surface of between approximately 2 mm to 3 mm.

101 697. The plate of claim 696, wherein the thickness of said plate is between approximately 2.25 mm to 2.5 mm.

102 698. The plate of claim 690, wherein said plate has a generally rectangular configuration with lobes extending from at least the corners of said plate and has at least one of said bone screw receiving holes located within one of said lobes.

103 699. The plate of claim 690, wherein said plate has a minimum length longer than a maximum width.

104 700. The plate of claim 699, wherein said plate has a length sufficient to span at least three consecutive vertebral bodies.

105 701. The plate of claim 690, wherein the central longitudinal axis of each bone screw receiving hole is generally perpendicular to said lower surface of said plate.

106 702. The plate of claim 690, wherein at least a portion of said lower surface comprises a bone ingrowth material.

107 703. The plate of claim 690, wherein at least a portion of said lower surface comprises a bone growth material.

108 704. The plate of claim 690, wherein at least a portion of said plate is coated with a material to induce the formation of bone.

109 705. The plate of claim 690, wherein said plate comprises bone morphogenetic protein.

110 706. The plate of claim 690, wherein at least a portion of said plate is made of a material which is resorbable. 94

111 707. The plate of claim 706, wherein said resorbable material is polyglyconate. 110

112 708. The plate of claim 706, wherein said resorbable material is impregnated with a fusion promoting substance. 110

113 709. The plate of claim 690, wherein at least a portion of said lower surface is textured so as to promote bone ingrowth. 94

114 710. The plate of claim 709, wherein said textured portion is impregnated with a fusion promoting substance. 113

115 711. The plate of claim 690, wherein said lower surface is porous so as to promote bone growth. 94

116 712. The plate of claim 711, wherein said lower surface has a porosity of approximately between 50 microns to 500 microns. 115

117 713. The plate of claim 712, wherein said lower surface has a porosity of approximately between 100 microns to 300 microns. 116

118 714. The plate of claim 690, in combination with an interbody implant. 94

119 715. The plate of claim 690, in combination with a bone graft. 94

120 716. The plate of claim 690, in combination with a bone growth promoting material. 94

121 717. The plate of claim 716, wherein said bone growth promoting material is at least in part other than bone. 120

122 718. The plate of claim 716, wherein said bone growth promoting material is at least in part bone. 120

123/ 719. The plate of claim 716, wherein said bone growth promoting material includes at least one of bone morphogenetic protein, hydroxyapatite, and hydroxyapatite tricalcium phosphate.

124/ 720. The plate of claim 690, in combination with a bioresorbable material.

721. A plate adapted to be applied to the anterior human cervical spine for contacting the anterior aspects of at least two cervical vertebral bodies to be fused together, said plate comprising:

a longitudinal axis, a lower surface being concave along a substantial portion of the longitudinal axis of said plate and adapted to contact the cervical vertebral bodies, and an upper surface opposite said lower surface, said lower surface being coated with bone morphogenetic protein; and

at least two bone screw receiving holes extending through said plate from said upper surface through said lower surface, each of said bone screw receiving holes being adapted to receive a screw for engaging said plate to the cervical spine.

722. The plate of claim 721, wherein said lower surface has a radius of curvature between approximately 15 cm to 30 cm.

723. The plate of claim 721, wherein said lower surface has a radius of curvature between approximately 20 cm to 25 cm.

724. The plate of claim 721, wherein said lower surface has a second concave curvature transverse to the longitudinal axis of said plate, said second concave curvature having a radius of curvature between approximately 15 mm to 25 mm.

725. The plate of claim 724, wherein said second concave curvature has a radius of curvature between approximately 19 mm to 21 mm.

726. The plate of claim 721, wherein said plate has a thickness between said upper surface and said lower surface of between approximately 2 mm to 3 mm.

727. The plate of claim 726, wherein the thickness of said plate is between approximately 2.25 mm to 2.5 mm.

728. The plate of claim 721, wherein said plate has a generally rectangular configuration with lobes extending from at least the corners of said plate and has at least one of said bone screw receiving holes located within one of said lobes.

729. The plate of claim 721, wherein said plate has a minimum length longer than a maximum width.

730. The plate of claim 729, wherein said plate has a length sufficient to span at least three consecutive vertebral bodies.

731. The plate of claim 721, wherein at least a portion of said lower surface comprises a bone ingrowth material.

732. The plate of claim 721, wherein at least a portion of said lower surface comprises a bone growth material.

733. The plate of claim 721, wherein at least a portion of said plate is coated with a material to induce the formation of bone.

734. The plate of claim 721, wherein said plate comprises bone morphogenetic protein.

735. The plate of claim 721, wherein at least a portion of said plate is made of a material which is resorbable.

736. The plate of claim 735, wherein said resorbable material is polyglyconate.

737. The plate of claim 735, wherein said resorbable material is impregnated with a fusion promoting substance.

738. The plate of claim 721, wherein at least a portion of said lower surface is textured so as to promote bone ingrowth.

739. The plate of claim 738, wherein said textured portion is impregnated with a fusion promoting substance.

740. The plate of claim 721, wherein said lower surface is porous so as to promote bone growth.

741. The plate of claim 740, wherein said lower surface has a porosity of approximately between 50 microns to 500 microns.

742. The plate of claim 741, wherein said lower surface has a porosity of approximately between 100 microns to 300 microns.

743. The plate of claim 721, in combination with an interbody implant.

744. The plate of claim 721, in combination with a bone graft.

745. The plate of claim 721, in combination with a bone growth promoting material.

746. The plate of claim 745, wherein said bone growth promoting material is at least in part other than bone.

747. The plate of claim 745, wherein said bone growth promoting material is at least in part bone.

748. The plate of claim 745, wherein said bone growth promoting material includes at least one of bone morphogenetic protein, hydroxyapatite, and hydroxyapatite tricalcium phosphate.

749. The plate of claim 721, in combination with a bioresorbable material.

750. A plate adapted to be applied to the anterior human cervical spine for contacting the anterior aspects of at least two cervical vertebral bodies to be fused together, said plate comprising:

a longitudinal axis, a lower surface being concave along a substantial portion of the longitudinal axis of said plate and adapted to contact the cervical vertebral bodies, and an upper surface opposite said lower surface;

at least two bone screw receiving holes extending through said plate from said upper surface through said lower surface, each of said bone screw receiving holes being adapted to receive a bone screw for engaging said plate to the cervical spine; and

opposite ends along the longitudinal axis of said plate, each of said opposite ends having an end wall extending from said upper surface to said lower surface, at least one of said ends having a recess located at the juncture of said end wall and said lower surface, said recess being configured to cooperate with a compression tool for compressing at least two vertebral bodies toward each other.

751. The plate of claim 750, wherein said lower surface has a radius of curvature between approximately 15 cm to 30 cm.

752. The plate of claim 750, wherein said lower surface has a radius of curvature between approximately 20 cm to 25 cm.

753. The plate of claim 750, wherein said lower surface has a second concave curvature transverse to the longitudinal axis of said plate, said second concave curvature having a radius of curvature between approximately 15 mm to 25 mm.

754. The plate of claim 753, wherein said second concave curvature has a radius of curvature between approximately 19 mm to 21 mm.

755. The plate of claim 750, wherein said plate has a thickness between said upper surface and said lower surface of between approximately 2 mm to 3 mm.

756. The plate of claim 755, wherein the thickness of said plate is between approximately 2.25 mm to 2.5 mm.

757. The plate of claim 750, wherein said plate has a generally rectangular configuration with lobes extending from at least the corners of said plate and has at least one of said bone screw receiving holes located within one of said lobes.

758. The plate of claim 750, wherein said plate has a minimum length longer than a maximum width.

759. The plate of claim 758, wherein said plate has a length sufficient to span at least three consecutive vertebral bodies.

760. The plate of claim 750, wherein at least a portion of said lower surface comprises a bone ingrowth material.

761. The plate of claim 750, wherein at least a portion of said lower surface comprises a bone growth material.

762. The plate of claim 750, wherein at least a portion of said plate is coated with a material to induce the formation of bone.

763. The plate of claim 750, wherein said plate comprises bone morphogenetic protein.

764. The plate of claim 750, wherein at least a portion of said plate is made of a material which is resorbable.



765. The plate of claim 764, wherein said resorbable material is polyglyconate.

766. The plate of claim 764, wherein said resorbable material is impregnated with a fusion promoting substance.

767. The plate of claim 750, wherein at least a portion of said lower surface is textured so as to promote bone ingrowth.

768. The plate of claim 767, wherein said textured portion is impregnated with a fusion promoting substance.

769. The plate of claim 750, wherein said lower surface is porous so as to promote bone growth.

770. The plate of claim 769, wherein said lower surface has a porosity of approximately between 50 microns to 500 microns.

B 771. The plate of claim 770, wherein said lower surface has a porosity of approximately between 100 microns to 300 microns.

772. The plate of claim 750, wherein said plate has a transverse axis and a height perpendicular to the longitudinal and transverse axes of said plate, and said recess has a height perpendicular to the longitudinal and transverse axes of said plate, the height of said recess being less than the height of said plate at said end wall.

773. The plate of claim 750, wherein said plate has a transverse axis and a height perpendicular to the longitudinal and transverse axes of said plate, and said recess has a height perpendicular to the longitudinal and transverse axes of said plate, the height of said recess being less than the height of said plate at said end wall.

774. The plate of claim 750, in combination with an interbody implant.

775. The plate of claim 750, in combination with a bone graft.